Volume 282 1994

Contents

Letters to the Editor

Equilibrium and rotational support of elliptical galaxies
Prugniel P., Simien F. L1

Plateau de Bure observations of mm-wave molecular absorption from ^{13}CO, HCO^+, and HCN
Lucas R., Liszt H. L5

New "flip-flop" of FK Comae Berenices
Jetsu L., Tuominen I., Grankin K.N., Mel'nikov S.Y., Shevchenko V.S. L9

Imaging the shell of Nova Cygni 1992 with HST
Paresce F. L13

The radio/infrared counterpart of the hard X-ray transient in Aquila: a possible source of repeated soft gamma-ray bursts
Mirabel I.F., Duc P.A., Rodríguez L.F., Teyssier R., Paul J., Claret A., Aurière M., Golombek D., Martí J. L17

Direct determination of stellar and orbital parameters of the spectroscopic binary TZ CrA
Corporon P., Lagrange A.M., Bouvier J. L21

The remarkable pre-main sequence object V 1318 Cygni
Aspin C., Sandell G., Weintraub D.A. L25

PG 2120+062: an apparently normal O-star at high galactic latitude
Moehler S., Heber U., Dreizler S. L29

A ROSAT observation of the transient X-ray pulsar GRO J1008-57
Petre R., Gehrels N. L33

How metal-rich are metal-rich HII regions
Kinkel U., Rosa M.R. L37

On the question of dark matter and cold H_2
Wilson T.L., Mauersberger R. L41

Cosmology

Correlation analysis of faint galaxies
Infante L. 353

Extragalactic astronomy

Ultraviolet (2000 Å) galaxy counts: comparison with predictions
Armand C., Milliard B. 1

Sub-arcsecond integral field spectroscopy of the Einstein Cross 2237+0305: lensing and microlensing effects
Fitte C., Adam G. 11

Star-formation histories and the mass-normalized FIR/radio correlation in late-type galaxies
Xu C., Lisenfeld U., Völk H.J., Wunderlich E. 19

The HII regions and the velocity field of NGC 7331
Marcelin M., Petrosian A.R., Amram P., Boulesteix J. 363

Infranight infrared spectral variability in OJ 287
Kidger M.R., Takalo L.O., de Diego J.A. 369

X-ray observations of NGC 3077
Bi H.G., Arp H., Zimmermann H.U. 386

(RN) A simple model for the luminosity distribution of edge-on spiral galaxies normal to the plane
Jacobi S., Kegel W.H. 401

The transfer of radiation in galactic nuclei. Dusty hot spots in the starburst galaxy M 82
Krügel E., Siebenmorgen R. 407

Kinematical properties of the members of Hickson group No. 90
Longo G., Busarello G., Lorenz H., Richter G., Zaggia S. 418

The structure of the halo of the giant elliptical galaxy IC 4296
Kemp S.N. 425

Is there primordial gas in IZw 18?
Kunth D., Lequeux J., Sargent W.L.W., Viallefond F. 709

Metal abundances of Magellanic Cloud clusters
Jasniewicz G., Thévenin F. 717

The magnetic field in the halo of M 82. Polarized radio emission at λλ6.2 and 3.6 cm
Reuter H.-P., Klein U., Lesch H., Wielebinski R., Kronberg P.P. 724

Light curves of type II supernovae. II. The analysis
Patat F., Barbon R., Cappellaro E., Turatto M. 731

Spectroscopic monitoring of active galactic nuclei. III. Size of the broad line region in NGC 3227
Salamanca I., Alloin D., Baribaud T., Axon D., de Bruyn G., Goad M., Gondhalekar P., van Groningen E., Jackson N., Kollatschny W., Laurikainen E., Lawrence A., Masegosa J., O'Brien P., Pelat D., Penston M.V., Pérez E., Pèrez-Fournon I., Robinson A., Santos-Lleo M., Stirpe G.M., Tadhunter C., Terlevich R., Unger S., Wagner S., Wanders I. 742

Erratum ESO 138 G1: a high excitation Seyfert 2 nucleus in a low luminosity early-type galaxy
Alloin D., Bica E., Bonatto C., Prugniel P. 1041

Galactic structure and dynamics

1:1:1 resonant periodic orbits in 3-dimensional galactic-type Hamiltonians
Caranicolas N.D. 34

Abundance gradients from disk planetary nebulae: O, Ne, S, and Ar
Maciel W.J., Köppen J. 436

A model of stellar evolution of the galactic disc. The IMF at low masses
Haywood M. 444

Stellar clusters and associations

UV-(2000 Å) imaging of globular clusters. II. The blue straggler stars of M3
Laget M., Milliard B., Donas J. 37

(RN) H and He burning phases in galactic clusters: the role of the original chemical composition
Cassisi S., Castellani V., Straniero O. 753

Formation, structure and evolution of stars

Multifrequency study of PSR 1822–09
Gil J.A., Jessner A., Kijak J., Kramer M., Malofeev V., Malov I., Seiradakis J.H., Sieber W., Wielebinski R. 45

Nonlinear instability of colliding winds in a double star system
Dgani R., Soker N. 54

Binary radiopulsars with optical companion
Lipunov V.M., Nazin S.N., Osminkin E.Y., Prokhorov M.E. 61

Seismological properties of intermediate-mass stars
Audard N., Provost J. 73

The luminosity function of massive white dwarfs
Díaz-Pinto A., García-Berro E., Hernanz M., Isern J., Mochkovitch R. 86

Spectroscopic analysis of hot binaries. I. The components of DH Cephei
Sturm E., Simon K.P. 93

The interior structure and evolution of blue straggler stars in open clusters
Schönberner D., Napiwotzki R. 106

The circumstellar envelope of S Scuti
Groenewegen M.A.T., de Jong T. 115

(RN) A search for cold dust around post-T Tauri candidates
Gahm G.F., Zinnecker H., Pallavicini R., Pasquini L. 123

Synthetic AGB evolution. II. The predicted abundances of planetary nebulae in the LMC
Groenewegen M.A.T., de Jong T. 127

(RN) The helium-to-hydrogen ratio of the UV-bright star Barnard 29 of Messier 13
Adelman S.J., Aikman G.C.L., Hayes D.S., Philip A.G.D., Sweigart A.V. 134

On the nature of KY Cephei
Hudec R., Dědoch A. 452

Studies of early-type variable stars. VIII. The massive binary system CC Cassiopeiae
Hill G., Hilditch R.W., Aikman G.C.L., Khalesseh B. 455

A positron-cyclotron maser mechanism for the core emission of radio pulsars
Zhu Y., Mao D., Wang D., Wu X. 467

The young stellar population associated with the H II region NGC 3576
Persi P., Roth M., Tapia M., Ferrari-Toniolo M., Marenzi A.R. 474

The evolution of a 20 $M_{\odot}$ rotating star: abundance anomalies in OBN stars in the LMC
Eryurt D., Kırbıyık H., Kızıloğlu N., Civelek R., Weiss A. 485

Spin-phase resolved optical spectroscopy of AE Aquarii
Reinsch K., Beuermann K. 493

Pre-main sequence lithium burning. I. Weak T Tauri stars
Martín E.L., Rebolo R., Magazzù A., Pavlenko Y.V. 503

Pre-main sequence lithium burning. II. Pleiades low mass stars
García López R.J., Rebolo R., Martín E.L. 518

New radiative opacities: their influence on stellar models
Cassisi S., Castellani V., Salaris M., Straniero O. 760

A search for γ-ray lines from the decay of ^{59}Fe in Supernova 1987A
Harris M.J., Leising M.D. 766

Theoretical hot horizontal branch stars
Castellani M., Castellani V., Pulone L., Tornambé A. 771

On the orbital period changes in contact binaries
Kalimeris A., Rovithis-Livaniou H., Rovithis P. 775

Radii and masses for the young star AR Aurigae
Nordström B., Johansen K.T. 787

(RN) The mass-ratio distribution of the spectroscopic binaries in the Pleiades
Goldberg D., Mazeh T. 801

The effects of stellar rotation on the absorption spectra of comets orbiting β Pictoris
Beust H., Lissauer J.J. 804

Clues for non-standard mixing on the red giant branch from $^{12}C/^{13}C$ and $^{12}C/^{14}N$ ratios in evolved stars
Charbonnel C. 811

Studies of early-type variable stars. XI. Absolute parameters of the Algol system RZ Cassiopeiae
Maxted P.F.L., Hill G., Hilditch R.W. 821

Duplicity in the solar neighbourhood. VII. Spectroscopic orbits of three K-dwarf stars
Tokovinin A.A., Duquennoy A., Halbwachs J.-L., Mayor M. 831

Resonance effects in fundamental, first overtone and double-mode Cepheids
Antonello E. 835

Semi-convection and overshooting in intermediate-mass and massive stars
Mowlavi N., Forestini M. 843

Near infrared speckle interferometry and water maser observations of carbon stars with an oxygen-rich circumstellar environment
Engels D., Leinert C. 858

Stellar atmospheres

Photometry of the Wolf-Rayet binary HD 211853 in the Vilnius photometric system
Annuk K. 137

Rapid line-profile variability of Hα and Hβ in the A-type shell star HD 163296
Pogodin M.A. 141

NLTE model stellar atmospheres with line blanketing near the series limits
Hubeny I., Hummer D.G., Lanz T. 151

Multisite continuous spectroscopy. III. Photometric analysis and spot modelling of the light curves of HR 1099 before and after the 1989 optical flares
Zhai D.S., Foing B.H., Cutispoto G., Zhang R.X., Catala C., Char S., Zhang X.B., Jankov S. 168

Line broadening in the presence of strong magnetic fields
Friedrich S., Östreicher R., Ruder H., Zeller G. 179

Stratification in WR envelopes as seen in He II lines
Niedzielski A. 529

Time-series photometric spot modeling. II. Fifteen years of photometry of the bright RS CVn binary HR 7275
Strassmeier K.G., Hall D.S., Henry G.W. 535

VLA observations of Cyg OB2 No. 5: detection of a weak radio companion and new observations and models for the main component
Miralles M.P., Rodríguez L.F., Tapia M., Roth M., Persi P., Ferrari-Toniolo M., Curiel S. 547

Chemical abundances in early B-type stars. V. Metal abundances and LTE/NLTE comparison
Kilian J. 867

On the information content of stellar spectra
Hafner M., Wehrse R. 874

High-resolution spectroscopy of cool K and M stars through the telluric water vapor absorption band near 9360 Å. I. Methodology and first results
Widemann T., Bertaux J.-L., Querci M., Querci F. 879

The reliability of H^- free-free absorption coefficients
John T.L. 890

Stellar effective temperatures and angular diameters determined by the infrared flux method (IRFM): revisions using improved Kurucz LTE stellar atmospheres
Blackwell D.E., Lynas-Gray A.E. 899

(RN) The behavior of some red and infrared helium lines
Jaschek M., Andrillat Y., Houziaux L., Jaschek C. 911

Diffuse matter in space (including H II regions and planetary nebulae)

Radio and near-infrared images of IRAS 21282+5050: a transitional planetary nebula
Likkel L., Morris M., Kastner J.H., Forveille T. 190

(RN) PN G160.7–2.9: a new planetary nebula
Weinberger R., Saurer W., Lercher G., Seeberger R. 197

The carbon abundance problem in planetary nebulae
Rola C., Stasińska G. 199

Lineshapes of intense OH masers in star-forming regions
Field D., Gray M.D., de St. Paer P. 213

Atomic carbon in interstellar clouds
Flower D.R., Le Bourlot J., Pineau des Forêts G., Roueff E. 225

Infrared images, 1.3 mm continuum and ammonia line observations of IRAS 08076-3556
Persi P., Ferrari-Toniolo M., Marenzi A.R., Anglada G., Chini R., Krügel E., Sepúlveda I. 233

Is there a connection between thermal pulses and PNe halos: on the way to an answer
Frank A., van der Veen W.E.C.J., Balick B. 554

Image deprojection applied to the Einstein Cygnus Loop X-ray image
Leahy D.A., Volk K. 561

Long-slit spectroscopic study of the bipolar reflection nebula M 1-92: detection of compact Herbig–Haro condensations in the lobes
Solf J. 567

Temperatures and luminosities of symbiotic novae
Mürset U., Nussbaumer H. 586

Physical and chemical structure of the IC 63 nebula. I. Millimeter and far-infrared observations
Jansen D.J., van Dishoeck E.F., Black J.H. 605

Iron-aromatics coordination in molecular clouds
Marty P., Serra G., Chaudret B., Ristorcelli I. 916

Interstellar oxygen, nitrogen and neon in the heliosphere
Geiss J., Gloeckler G., Mall U., von Steiger R., Galvin A.B., Ogilvie K.W. 924

The Sun

Kinematic characteristics of the surge on March 19, 1989
Gu X.M., Lin J., Li K.J., Xuan J.Y., Luan T., Li Z.K. 240

Solar granulation and statistical crystallography: a modeling approach using size-shape relations
Noever D.A. 252

Center-to-limb observations of the λ285.2 nm Mg I UV resonance line
Briand C., Lemaire P. 621

The shape of a magnetic arcade embedded in the solar corona
Čadež V.M., Oliver R., Ballester J.L. 934

Chromospheric fine structure: black & white mottles
Heinzel P., Schmieder B. 939

The solar system

Titius-Bode laws in the solar system. I. Scale invariance explains everything
Graner F., Dubrulle B. 262

Titius-Bode laws in the solar system. II. Build your own law from disk models
Dubrulle B., Graner F. 269

A method for computing visible and infrared polarized monochromatic radiation in planetary atmospheres
Wauben W.M.F., de Haan J.F., Hovenier J.W. 277

A spectroscopic survey of D-type asteroids
Fitzsimmons A., Dahlgren M., Lagerkvist C.-I., Magnusson P., Williams I.P. 634

Detection of a polycyclic aromatic molecule in comet P/Halley
Moreels G., Clairemidi J., Hermine P., Brechignac P., Rousselot P. 643

Silicon carbide: a possible component of the cometary dust
Orofino V., Blanco A., Fonti S. 657

Delivery of meteorites through the ν_6 secular resonance
Morbidelli A., Gonczi R., Froeschlé C., Farinella P. 955

Spin axis orientation of 2060 Chiron from dust coma modeling
Fulle M. 980

Celestial mechanics and astrometry

Polynomial approximations of Poincaré maps for Hamiltonian systems. II
Petit J.-M., Froeschlé C. 291

Numerical expressions for precession formulae and mean elements for the Moon and the planets
Simon J.L., Bretagnon P., Chapront J., Chapront-Touzé M., Francou G., Laskar J. 663

New optical positions of the globular cluster X-ray sources NGC 6712: S/X 1850-086 and M 15: AC 211/X 2127+119
Geffert M., Aurière M., Requième Y., Mazurier J.-M. 989

Physical and chemical processes

Multidimensional relativistic hydrodynamics: characteristic fields and modern high-resolution shock-capturing schemes
Font J.A., Ibáñez J.M., Marquina A., Martí J.M. 304

Auger process following 1s-photoionization: O III lines
Petrini D., de Araújo F.X. 315

Ion-dynamical effects in the Stark broadening of H I and He II lines and the implications for high resolution spectroscopy
Schöning T. 994

Recombination coefficients for O II lines at nebular temperatures and densities
Storey P.J. 999

Fe I oscillator strengths for lines with excitation energies between 3 and 7 eV
Bard A., Kock M. 1014

Instruments, data processing, and computational methods

A 230 GHz SIS receiver for SEST
Bloemhof E.E., Blundell R., Miller R.E. 318

CFHT MOS/SIS spectrograph performance
Le Fèvre O., Crampton D., Felenbok P., Monnet G. 325

The first geodetic VLBI experiment at 22 GHz between Japan and Italy
Takahashi Y., Kiuchi H., Kurihara N., Grueff G., Ambrosini R. 341

A semi-empirical absolute flux calibration in the near infrared. Direct stellar diameters vs. IRFM determinations
Alonso A., Arribas S., Martínez-Roger C. 684

Iterative blind deconvolution method using Lucy's algorithm
Tsumuraya F., Miura N., Baba N. 699

Experimental estimation of the spatial-coherence outer scale from a wavefront statistical analysis
Ziad A., Borgnino J., Martin F., Agabi A. 1021

Sidelobes of the SIGMA telescope
Claret A., Lebrun F., Laurent P., Leray J.P. 1034

Abstracts of articles which have been published in A. & A. Suppl. Ser. 100, No. 1

An atlas of high resolution line profiles of symbiotic stars. II. Echelle spectroscopy of northern sky objects
Ivison R.J., Bode M.F., Meaburn J. 349

The UKST Survey of planetary nebulae in the Large Magellanic Cloud
Morgan D.H. 349

Multicolor photometry of clusters of galaxies: A 3284, A 3305, A 1942
Molinari E., Banzi M., Buzzoni A., Chincarini G., Pedrana M.D. 349

Atomic data from the IRON project. II. Effective collision strengths for infrared transitions in carbon-like ions
Lennon D.J., Burke V.M. 350

The Ca II triplet lines in cool stars
Mallik S.V. 350

Spectral lines unaffected by instrumental polarization. II. Selected lines of astrophysical interest
Vela Villahoz E., Sánchez Almeida J., Wittmann A.D. 350

A systematic study of IRAS selected proto-planetary nebula candidates. II. OH and CO observations
Hu J.Y., te Lintel Hekkert P., Slijkhuis S., Baas F., Sahai R., Wood P.R. 350

BVRI photometry of the Dipper Asterism region in M 67
Anupama G.C., Kembhavi A.K., Prabhu T.P., Singh K.P., Bhat P.N. 351

The nature of the F str λ4077 stars. V. Spectroscopic data
North P., Berthet S., Lanz T. 351

An update of the optical identification status of the S4 radio source catalogue
Stickel M., Kühr H. 351

Amplitude calibration of the European *VLBI* network
Bondi M., Mantovani F., Sherwood W., Tzioumis A., Venturi T. 351

Five old open clusters: NGC 2682, NGC 2243, Berkeley 39, NGC 188 and NGC 6791
Carraro G., Chiosi C., Bressan A., Bertelli G. 352

Papers accepted for publication in A.&A. (January 1994) 1042